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Enhancing capacity-building in global public health*

Note by the Secretary-General

The Secretary-General has the honour to submit to the Members of the General Assembly the report of the World Health Organization on enhancing capacity-building in global public health, prepared pursuant to General Assembly resolution 60/35 of 30 November 2005.

Summary

The present report responds to General Assembly resolution 60/35 of 30 November 2005, in which the Assembly requested the Secretary-General to report to the General Assembly at its sixty-first session on progress made in the implementation of the resolution to enhance capacity-building in public health. The report takes note of national and international efforts made to advance the health-related development goals contained in the United Nations Millennium Declaration[a] and the 2005 World Summit Outcome.[b]

The report describes the current state of key infectious diseases, such as human cases of avian influenza, HIV/AIDS, tuberculosis, malaria and polio, as well as a set of major health issues confronting developing countries and transitional economies that have significant health, economic, social and political impact on individuals, communities and nations. The report further highlights a number of frameworks and strategies that can be used to prevent, detect, report, prepare and respond to outbreaks of disease. These include key components of optimally functioning health

* The report is submitted late owing to delays in receiving the required inputs for the United Nations system.

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systems required to respond to disease outbreaks and major epidemics. Ensuring the supply and retention of an adequate supply of trained health workers and securing the necessary national and community political will and financing resources are vital to the success of any effort. Enabling national efforts, particularly those coping with limited capacity, is an organized international response grounded on the principles of cooperation, networks, partnerships and leadership. The United Nations system, particularly organizations such as the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), the World Organization for Animal Health (OIE), the United Nations Children's Fund (UNICEF), the Joint United Nations Programme on HIV/AIDS (UNAIDS), the United Nations Population Fund (UNFPA) and the United Nations Development Programme (UNDP), offers considerable experience and assistance to catalyse and support national efforts.

[7] See resolution 55/2.
[8] See resolution 60/1.

I. The centrality of health to development

1. The Millennium Development Goals are increasingly accepted as the overarching development framework. They provide a common set of priorities for addressing poverty. Three of the eight Millennium Development Goals relate directly to health, thus giving recognition to the central role that health plays in the global agenda of reducing poverty, in addition to it being a measure of human well-being. Health also contributes to the achievement of all the other Millennium Development Goals, particularly those related to education, gender equality and the eradication of extreme poverty and hunger. The health goals focus on problems that disproportionally affect the poor.

2. Efforts over the past few years have yielded success. Childhood mortality is falling in countries such as Ethiopia, the United Republic of Tanzania, Mozambique and Malawi. Six African countries are reporting significant reductions in HIV/AIDS prevalence. The price of antiretroviral drugs has plummeted; more children are sleeping under insecticide-treated nets; more health workers are being deployed, as Governments recognize the severity of staff shortages. There are promises to double aid overall, and for those donors that have not done so, to reach the 0.7 per cent target.

3. Nevertheless, while there are individual stories of progress, the overall situation with regard to the health-related Millennium Development Goals remains bleak. There is still no region of the developing world on track to meet the child mortality target. For maternal mortality, evidence indicates that declines have been limited to countries with lower levels of mortality. Countries with high maternal mortality are experiencing stagnation or even reversals.

4. At the recent joint WHO/World Bank-sponsored high-level forum for accelerating progress towards the health Millennium Development Goals, WHO played an important role in promoting aid effectiveness in development assistance for health. The three meetings of the high-level forum highlighted the importance of harmonization and alignment, aid predictability and managing for results in ensuring that aid for health, from traditional and new funding sources, has the greatest possible impact on health at the country level. The meetings also emphasized the need for increased investment in the systems and staff needed to deliver health outcomes, and the need to give greater attention to the circumstances of countries where Governments are unwilling or unable to address the health needs of their people — the so-called fragile States.

5. Key achievements of the high-level forum process include adapting the Paris Principles on aid effectiveness to the global health partnerships, and seeing them adopted or in the process of adoption by all the partnerships. The Global Alliance for Vaccines and Immunizations has gone even further in implementing the Paris Principles by introducing a long-term, flexible and predictable funding window for health systems support, thereby addressing one of the greatest barriers to scaling up in health: aid volatility.

6. The ability of countries to respond to existing and emerging infectious diseases and chronic diseases depends on robust national institutions, their organization and management, and the availability of trained health personnel and health financing. To date, the inadequate supply of health personnel represents a particular limit to these responses.

7. Global public health capacity entails two fundamental aspects of the health system, focusing on public health and health care. Both aspects of the health system have capacity challenges, some of which are similar, e.g., health personnel, information systems, management and governance. Detecting, reporting and responding to emerging infectious diseases, such as avian and human influenza, depend heavily on functional national public health systems. Treating those infected and affected, and alleviating their suffering, depends on the availability of trained health personnel and the availability of appropriate drugs and vaccines. All these responses, in turn, depend on the national and international political will and financing to mobilize responses and to forge partnerships across sectors to rapidly communicate and support the required actions.

II. Status of global public health

8. In the past decade there has been both great progress in and significant challenges to health for the world population, particularly in developing countries. The emergence of human cases of avian influenza has reminded the world of the rapidity with which diseases can take hold in countries and spread internationally. As of 14 September 2006, there have been 246 human cases of avian influenza and 144 deaths in 10 countries. The impact on economies has been enormous. The threat of a human pandemic remains high, as animal-based avian influenza has not yet been controlled.

9. In addition to the emergence of new or newly recognized pathogens such as H5N1, there are a number of other well-characterized infectious diseases that pose very significant threats to human health. These include cholera, Marburg, Crimean-Congo, Dengue, and Ebola haemorrhagic fevers, meningitis and yellow fever. Many of these diseases appear as sudden outbreaks, or re-emerge after long periods of quiet, particularly in environments of increased migration, urbanization and conflict. Between January 2001 and May 2006, WHO verified more than 1,100 epidemic events. The potential onset of rapidly moving infectious diseases reminds the world of the vulnerability of populations to succumb to highly pathogenic diseases, particularly in an era of large population movements, trade, urbanization and conflict or natural disasters. Severe acute respiratory syndrome (SARS) illustrates how an infectious disease could pose a serious threat to global health security, the livelihood of populations, the functioning of health systems and the stability and growth of economies. Similarly, initial scenarios of a human influenza pandemic would have devastating effects on human health, the survival of existing development projects and the health of the global economy.

10. Approximately 1 billion people — one sixth of the world population, or one person in six — suffer from one or more neglected tropical diseases such as Buruli ulcer, cholera, cysticercosis, dracunculiasis (Guinea worm disease), foodborne trematode infections, hydatidosis, leishmaniasis, lymphatic filariasis, onchocerciasis, schistosomiasis, soil-transmitted helminthiasis, trachoma and trypanosomiasis. Several of these diseases, and others such as dengue, are vector-borne. The most affected populations are also the poorest and most vulnerable and are found mainly in tropical and subtropical areas of the world. Some diseases affect individuals throughout their lives, causing a high degree of morbidity and physical disability and, in certain cases, gross disfigurement. Others are acute infections, with transient, severe and sometimes fatal outcomes. For a large group of these

diseases — mainly helminthic infections — effective, inexpensive or donated drugs are available for their prevention and control. Treatment with effective antibiotics is leading to the elimination of leprosy. Similarly, the use of an effective antibiotic is enhancing progress towards the final elimination of blinding trachoma. The Guinea Worm Eradication Programme has reduced the number of people affected by this disease from an estimated 3.5 million in the 1980s to 10,000 in 2005. Onchocerciasis has freed more than 25 million hectares of previously onchocerciasis-infected land available for resettlement and agricultural cultivation, thereby considerably improving development prospects in Africa and Latin America. Large-scale, regular treatment plays a central role in the control of many neglected tropical diseases such as filariasis, onchocerciasis, schistosomiasis and soil-transmitted nematode infections. For a second group of neglected tropical diseases the only clinical option currently available is systematic case-finding and management at an early stage for diseases such as Buruli ulcer, cholera and other diarrhoeal diseases, human African trypanosomiasis and leishmaniasis. Even for these infections, systematic use of the present, imperfect tools at an early stage can dramatically reduce mortality and morbidity. For others, vector control tools are available and present the main method of transmission control, as in the case of Chagas disease.

11. HIV/AIDS, tuberculosis and malaria continue to afflict large numbers of people worldwide, disproportionately affecting the poor in developing countries and transitional economies. As of June 2006, UNAIDS and WHO estimated that there were nearly 40 million people with HIV/AIDS worldwide. Of those, approximately 6.8 million require antiretroviral treatment. Significant progress has been achieved as a result of the "3 by 5" initiative and the efforts of major assistance programmes such as the United States President's Emergency Plan for AIDS Relief programme, financial support from the Global Fund to Fight AIDS, Tuberculosis and Malaria, and the World Bank Multi-country HIV/AIDS Programme (MAP) project to increase the number of persons receiving HIV treatment from approximately 400,000 in December 2003 to 1.6 million in June 2006. The progress in Africa was particularly noteworthy, with a 10-fold increase in persons undergoing HIV treatment between December 2003 and June 2006. The Political Declaration on HIV/AIDS adopted by the General Assembly in June 2006[1] and the 2005 World Summit Outcome[2] reaffirmed the aim of coming as close as possible to the goal of universal access to treatment by 2010 by all who need it. The resolutions outline a set of interventions and efforts, to be implemented across sectors, to halt and reverse the spread of HIV/AIDS. Efforts to accelerate access to and the uptake of prevention are required, particularly the low level of vulnerable population coverage to services to prevent sexual transmission of HIV, as well as injecting drug use, preventing transmission in health-care settings, ensuring blood supply safety and preventing mother-to-child transmission of HIV/AIDS. More worrying is the continued low numbers of infected individuals who do not know their personal HIV infection status.

12. Tuberculosis remains an enormous challenge for developing countries, with WHO reporting 1.7 million deaths occurring in 2004, including individuals who were co-infected with HIV. Of the 8.9 million new cases of tuberculosis in 2004,

[1] General Assembly resolution 60/262.

[2] General Assembly resolution 60/1.

80 per cent occurred in Africa, South-East Asia and the western Pacific region. Whereas there has been success in controlling tuberculosis in most parts of the world, tuberculosis incidence continues to increase in Africa and Eastern Europe. The most recent global figures from WHO monitoring the 2005 Amsterdam Declaration to Stop Tuberculosis targets of detecting 70 per cent of new infectious cases and to treat successfully 85 per cent of detected sputum positive patients are 53 per cent (2004 data) and 82 per cent (2003 data), respectively.[3] The emergence of multi-drug resistant tuberculosis (resistance to at least two of the main first-line drugs), and extensive drug resistant tuberculosis (resistance to three or more of the six classes of second-line drugs) is alarming, given the very high mortality rates associated with these strains, the co-infection of HIV and tuberculosis, and the lack of remaining drugs to treat these conditions. In 2005, there were an estimated 400,000 cases of multi-drug resistant tuberculosis in the world. The new Global Plan to Stop TB (2006-2015) sets out a set of actions to be achieved to prevent, treat and control tuberculosis. These actions, if successful, will have a significant impact on the achievement of the Millennium Development Goals.

13. Malaria continues to cause more than one million preventable deaths a year, especially in Africa among young children and other vulnerable groups. The disease continues to threaten the lives of millions of people in the Americas, Asia and the Pacific region. Previous General Assembly and World Health Assembly resolutions and reports[4] outline the scope of the problem and available interventions that can be applied to control and treat malaria. The availability of artemisinin-based combination therapies has provided hope for persons living in previously malaria drug-resistant areas. As of January 2006, 56 countries have adopted artemisinin-based combination therapies as their first or second line treatment choice. The increasing availability of long-lasting insecticide-treated bednets can decrease child mortality due to malaria by at least 20 per cent. Innovations in the distribution of bednets have included their integration with antenatal care programmes and the expanded programme on immunization. Additional opportunities exist to couple bednet distribution with other disease control programmes such as on lymphatic filariasis, deworming and micronutrient distribution. Recent WHO guidance addresses the effective use of indoor residual spraying to control mosquitoes, particularly in constant and high transmission areas. Additional interventions include those to address malaria in pregnant women and children, as well as in countries that are in conflict or affected by complex emergencies.

14. Eradication efforts continue to rid the world of poliomyelitis. Since 1988, Rotary International, the Centers for Disease Control and Prevention, UNICEF and WHO have led an effort that has reduced polio cases by more than 99 per cent. Today, only four countries in the world remain endemic. With the end of transmission in sight, certification of a polio-free world would follow.

15. Preventable childhood illnesses account for 1.4 million deaths each year. The establishment of strong national immunization services in many countries over recent years has ensured that today more than 70 per cent of the world's targeted population is reached by those services. Despite these achievements, commitment to immunization has not been sustained in all countries. In 2003 an estimated 27

[3] World Health Organization, *Global tuberculosis control — surveillance, planning, financing: 2005 and 2006* (Geneva, 2005 and 2006).

[4] General Assembly resolution 59/256, A/60/208 and World Health Assembly resolution 58/2.

million infants and 40 million pregnant women worldwide remained in need of immunization. Increasingly, immunization will help to overcome barriers to equitable health-service delivery and sectorwide development, and will benefit from those efforts. The benefits include better public health and improved efficiency of public health services. Immunization services inevitably experience the constraints that affect the health system as a whole, but they can help significantly in overcoming systemwide barriers through the strengthening of district teams and their capacity to make optimal use of the resources and opportunities available locally. In turn, sectorwide approaches to strengthening cross-cutting areas such as human resources management, financing, logistics, public-private partnerships and information-sharing can clearly benefit immunization.

16. The infectious diseases that are currently threatening the world have direct linkages to reproductive health. Their management depends largely on the existence of strong health systems and their accessibility to the public at large. This requires delivery points that are not geared towards a single health condition, but rather towards an integrated approach whereby various tasks are performed by health workers to provide a "one-stop shop" for the convenience of individuals attending health facilities. In the case of both global infections and reproductive health, human resources constitute an essential component for the provision of health services. The Programme of Action of the International Conference on Population and Development held in Cairo in 1994 adopted the goal of universal access to reproductive health services by 2015, which has been affirmed in the 2005 World Summit Outcome. This is crucial for the attainment of Millennium Development Goals 4, 5 and 6, which relate to child mortality, maternal health and HIV control, and requires a focus on prevention, treatment, care and support. Examples of prevention include family planning for the timing of pregnancies, skilled attendance at birth to ensure safe delivery, emergency obstetric care to reduce morbidity and mortality from labour complications and safe sex practices to prevent sexually transmitted infections, including HIV/AIDS. Commodity security is also vital: lack of basic supplies hinders interventions for the management of infections and diseases.

17. Some 80 per cent of chronic disease deaths occur in low and middle income countries. More than two thirds (70.5 per cent) of the world population die from noncommunicable diseases and conditions. They present the largest and fastest growing global health burdens and are the major looming health issue of today and tomorrow. Too often, however, they are also the most invisible, underestimated and under-addressed. They encompass people affected by chronic diseases (including cardiovascular disease, stroke, diabetes, cancer and others), mental health disorders, substance abuse, injuries, violence and poor nutrition. Together they present a growing threat to the security and well-being of people, communities, economies and countries, particularly in developing and emerging countries. Many low and middle income countries are bearing the double burden of communicable diseases such as HIV/AIDS, malaria and tuberculosis, as well as increasing chronic diseases and mental health disorders, injuries and violence. While noncommunicable diseases and conditions account for the greatest proportion of deaths, they are equally responsible for an unacceptable level of premature death, illness or disability, with the resulting burden on individuals, families, communities and nations. Cost-effective and health-effective prevention strategies exist. Treatment,

care and rehabilitation programmes and strategies exist and have implications for improving the public health and health-care capacities of countries.

18. Natural disasters and conflict situations exacerbate the spread and impact of infectious diseases and highlight the need for public health system capacity in places where displaced persons congregate.

19. The disease examples noted above illustrate the need for robust national public health capacity, and international assistance supporting these efforts. Avian and human influenza pandemic preparedness and response reflects the importance of capacity within the animal health sector and its direct influence on public health to respond, i.e., to prevent and control human cases of avian influenza. Effective animal control largely reduces the incidence of human cases. In an environment of avian and human influenza, health-care capacity to identify appropriately clinical cases that might be avian influenza in humans, apart from the need for rapid epidemiological and laboratory investigation, is important. The major lessons learned from SARS was the need to build up surveillance and information systems that enable timely reporting and response and the need to improve infection control capacity. In other cases where vaccines exist, such as for yellow fever and meningitis, the limiting factors are often funding, shortages and national service delivery obstacles. Global initiatives such as the Global Alliance for Vaccines and Immunizations have recently provided badly needed financial assistance for yellow fever, but meningitis prevention remains poorly supported (particularly in sub-Saharan Africa).

20. Interventions required for haemorrhagic fevers such as Marburg, Congo-Crimean haemorrhagic fever, and Ebola require a combination of effective and efficient epidemiological surveillance and training of health personnel in the techniques of infection control to reduce occupational risk and provide appropriate clinical care. For other diseases, such as cholera, a combination of rapid detection and response entailing improved water supplies and sanitation is critical. Cholera prevention represents the necessary collaboration across sectors that are also integrally linked to several Millennium Development Goals. The efforts of polio eradication and measles control further exemplify the utility and necessity of active surveillance and intervention capacity.

21. Controlling other large scale diseases, such as HIV/AIDS, tuberculosis and malaria, depends on a combination of surveillance, laboratory capacity for diagnosis, drug use monitoring and drug resistance monitoring, health education and social mobilization to encourage behaviour change, case management such as directly observed treatment, short-course (DOTS) for tuberculosis, health-care treatment programmes, and capacity to ensure appropriate utilization of preventive measures. Preventable childhood diseases (respiratory and diarrhoeal) are mainly related to poverty, the alleviation of which will lessen the burden on public health and health care.

III. Building national and international capacity in public health, and building international cooperation

International Health Regulations

22. Changes in the environment and in human behaviour, including the marked increase in international air travel (an estimated 1.6 billion passengers every year), mean that vulnerability to the international spread of outbreaks is now regarded as universal. The potential for outbreaks to cause social and economic disruption has been amplified by electronic communications and the close interdependence of economies. In an increasingly globalized world serious and unusual disease events require an agreed code of conduct that can "prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international trade and traffic". The quoted text is part of the purpose statement in the legally binding global agreement on public health known as the International Health Regulations 2005, or "IHR(2005)", which will enter into force in June 2007. In an exceptional move, and in response to the emerging human cases of avian influenza, the World Health Assembly adopted in May 2006 a resolution calling for the immediate voluntary implementation of the provisions of IHR(2005) considered relevant for the risk posed by avian influenza and pandemic influenza.

23. A major strategic advance for global public health, the revised International Health Regulations were adopted by the World Health Assembly in May 2005 (World Health Assembly resolutions 58.3 and 59.2). The IHR(2005) significantly broaden their scope when compared to the current Regulations, the International Health Regulations 1969 (IHR(1969)), from States notification to WHO of single cases of cholera, plague and yellow fever only, to all events that may constitute a public health emergency of international concern.[5] States are also obliged to report evidence of public health risks outside their territory that may cause international disease spread. The Regulations will also allow the conclusion of agreements with intergovernmental organizations and international bodies to facilitate their implementation.

24. National actions will need to focus on: (a) notifying and reporting to WHO through the national IHR focal point. In 2006, all countries were asked to identify their national IHR focal point to WHO; (b) assessing their current capacities to deliver the requirements of annex 1 of World Health Assembly resolution 58.3 and developing plans to meet gaps identified; (c) identifying and securing the resources needed to implement those plans both internally and from external support. The collaboration between States, especially between donor and developing countries, that focuses on ensuring the technical and other resources for meeting the IHR(2005) capacity obligations is a crucial factor not only in implementing the Regulations, but also in building the systems that provide global health security; (d) identifying and addressing any national administrative and legal constraints for timely implementation of the Regulations and promoting intersectoral participation in such implementation; and (e) initiating the process for using the decision

[5] A public health emergency of international concern is defined in IHR(2005) as an extraordinary public health event which constitutes a public health risk to other States through the international spread of disease, and which may require a coordinated international response.

instrument in World Health Assembly resolution 58.3, annex 2 of IHR(2005), for the assessment of events that may require notification to WHO.

25. Effective national implementation of IHR(2005) will require member States to invest in, manage and improve the capacity of a number of public health system components. These include epidemiological surveillance and information management systems (national and decentralized), laboratory strengthening, health and preparedness planning, health communication and increased cross-sectoral collaboration. Countries will be required to ensure that the core capacities outlined in annex 1 of IHR(2005) are in place and functioning within five years from June 2007.

26. To fully implement and comply with IHR(2005), member States, WHO and other relevant international organizations will have to develop, maintain and strengthen appropriate public health and administrative capacities in general, and at international ports, airports and some land crossings. This will require not only close collaboration between WHO and member States, but also among member States. Such multilateral cooperation will better prepare the world for future public health emergencies.

27. Over the past few years, WHO has supported member States in building sustainable surveillance and response capacity with the aim to provide reliable and timely information on the occurrence of priority infections, information essential for early detection of outbreaks, monitoring of disease trends and burden, and monitoring and evaluation of the impact of disease prevention and control programmes. This framework of assessments, prioritization, plan-of-action development, implementation, monitoring and evaluation is currently being implemented. Key partnerships undertaken by WHO to support countries are the management of the Global Outbreak Alert and Response Network and the Global Influenza Surveillance Network, which are described more fully below.

Responding to avian and human influenza

28. As has been noted, the human cases of avian influenza are symbolic of an emerging epidemic disease that presents a major threat to life, economies and security in an increasingly interconnected and interdependent world. The timing and severity of a pandemic cannot be predicted, but the world has been given the unprecedented advantage of an advance warning that a pandemic may be near. This advantage must be fully exploited to enhance global preparedness. The G-8 St. Petersburg summit meeting document "Fight against infectious disease" called for improved international cooperation on the surveillance and monitoring of infectious diseases, including better coordination between the animal and health communities, as well as building a set of national and international capacities to respond to infectious diseases.[6]

29. In 2006, WHO released its strategic action plan for pandemic influenza. This framework sets out five key action areas: (a) reducing human exposure to the H5N1 virus; (b) strengthening the early warning system; (c) intensifying rapid containment operations; (d) building capacity to cope with a pandemic; and (e) coordinating global scientific research and development. The strategic action plan evolved from a major meeting jointly convened by WHO, FAO, the World Organization for Animal

[6] http://en.g8russia.ru/docs/10.html.

Health and the World Bank, held from 7 to 9 November 2005. Concerning human health, the meeting focused on two sets of actions: preventing the emergence of a pandemic virus; and preparing all countries to cope with a pandemic in order to reduce morbidity and mortality and to mitigate economic and social disruption.

30. In August 2005, WHO distributed to all member States a document outlining recommended strategic actions for responding to avian influenza pandemic threat.[7] These recommended actions respond to different opportunities to intervene at different phases. There are six phases in all. Currently, the world remains at phase three: no or very limited human-to-human transmission. There has been no sustained human-to-human transmission to date. Each phase of alert coincides with a series of recommended activities to be undertaken by WHO, the international community, Governments and industry. Changes from one phase to another are triggered by several factors, which include the epidemiological behaviour of the disease and the characteristics of circulating viruses.

31. Between 2003 and April 2006, the spread of avian influenza in wild or domestic birds dramatically increased, marking the fastest and most extensive geographical spread of any highly pathogenic avian influenza virus since it was first recorded in 1878. Since mid-2003, 48 countries have reported the virus in domestic or wild birds. Of the 29 countries with outbreaks in poultry, only two have successfully eliminated the virus from their territories and maintained a disease-free status.

32. As of September 2006, nearly all countries have established an avian and human pandemic preparedness plan. Moreover, in support of countries experiencing outbreaks of human cases of avian influenza, WHO has staffed over 50 missions since January 2006 to support laboratory testing and specimen collection, epidemiological investigations, surveillance and risk assessment, social mobilization and outbreak communications, clinical care and infection control, and logistics.

33. Multi-agency coordination and action within the United Nations system is key to supporting countries. With over 70 per cent of new and emerging diseases originating in animals, this reality requires a deeper level of cooperation between animal and human health sectors at national and international levels. With the aim to strengthen the coherence of the United Nations system's fight against avian influenza and a potential human influenza pandemic, the Secretary-General, on 25 September 2005, agreed with the Director-General of WHO to appoint a Senior United Nations System Coordinator for Avian and Human Influenza (UNSIC).

34. On behalf of the core United Nations agencies, programmes and funds, UNSIC coordinated the development of the "Consolidated Action Plan for Contributions of the UN System", which was released on 3 July 2006.[8] The Action Plan outlines the common objectives, strategic directions and results to be attained by different parts of the United Nations system together with their international and regional partners. The United Nations system, under this plan, responds to the requests of Governments for coordinated and sustained international support to implement avian and human influenza programmes for which they have the primary

[7] WHO global influenza pandemic preparedness plan, 2005, see www.who.int/csr/disease/avian_influenza/en/index.html.

[8] "Avian and Human Pandemic Influenza: Consolidated Action Plan For Contributions of the UN System", 3 July 2006 (www.undg.org/content.cfm?id=1725).

responsibility. While different United Nations system agencies, funds, programmes and other bodies will be responsible for implementing actions outlined in this plan, emphasis within this consolidated approach is on the synergy of the contributions made by individual entities. Given the rapidly changing avian and human influenza situation, the plan will be updated in December 2006.

35. To avert a human influenza pandemic and to detect, report and respond to an array of epidemics and diseases requires the enhancement of global public health capacity. Global and national surveillance systems still have a number of blind spots. In order to better cope and respond to an influenza pandemic, and to a host of other diseases (acute and chronic), a set of public health and medical care capacities must be improved. These include: laboratory capabilities and networks, surveillance programmes, national preparedness plans, outreach to health-care workers and efforts such as social mobilization, the use of medicines, vaccines and non-pharmaceutical measures and, in cases of infectious diseases, the role of quarantine and transport. If not properly planned for, the need for rapid response can drain resources, staff and supplies from previously defined public health priorities and routine disease control activities, such as childhood immunization programmes, eradication programmes or HIV/AIDS, tuberculosis and malaria control. In countries with weak health infrastructures, health emergency response has often disrupted routine health services and humanitarian programmes for months on end. Some of the critical capacities are described in the sections below.

International surveillance and response

36. An effective international alert and response system for epidemics has been established by WHO in partnership with many other agencies and institutions. Systematic mechanisms for gathering epidemic intelligence and verifying the existence of outbreaks have been established and are linked to rapid risk assessment, information dissemination and field response in support of affected States. The Global Outbreak Alert and Response Network, coordinated by WHO, provides rapid international multidisciplinary technical support for outbreak response. It is made up of over 140 technical partners from more than 60 countries. Between 2000 and 2005, there were more than 70 international outbreak responses relying on the deployment of 500 experts. Regional and global mechanisms for stockpiling and rapid distribution of vaccines, drugs and specialized investigation and protection equipment have been established for yellow fever, meningitis, smallpox, haemorrhagic fevers and influenza. A specialized logistics response unit has been developed for epidemic response that allows WHO and its partners to be operational in extreme environments. As part of an effort to improve operational coordination and information management, an updated global event management system is being developed that will allow real time access to critical information on epidemics. WHO continues to strengthen a series of specialized surveillance networks for dangerous pathogens, including plague, dengue and influenza. The Global Influenza Surveillance Network is currently made up of 116 institutions from 87 countries, which enables WHO to recommend twice annually the content of the influenza vaccine for the subsequent influenza season to support. It also serves as a global alert mechanism for the emergence of influenza viruses with pandemic potential.

37. The unique and large scale, active surveillance network developed by the Global Polio Eradication Initiative is increasingly being used to support surveillance of many other vaccine-preventable diseases such as yellow fever, measles,

meningitis and neonatal tetanus. Additionally, this unique network is also regularly supporting outbreak surveillance and response activities for other health emergencies and outbreaks, including SARS, avian influenza, Marburg fever, yellow fever and Ebola outbreaks. With local knowledge of communities, health systems and government structures, the polio network's technical capacity often helps sustain international and national relief efforts, such as during the responses to the South-East Asia tsunami in December 2004 and the Pakistan earthquake in October 2005. Continued investment in this network once polio eradication has been completed, with a broadening of the skills of surveillance officers, immunization staff and laboratories, would increase capacity nationally and internationally for surveillance and response of vaccine-preventable and other outbreak-prone infectious diseases.

Increasing public awareness

38. The harm inflicted by disease outbreaks can be magnified by poor communication, thus prolonging an outbreak and putting more lives at risk and exacerbating the damage to social, political and economic systems both domestically and internationally. Following the containment of SARS, WHO launched a year-long effort of literature review and expert consultation to identify the best practices for communicating with the public during an outbreak. To be effective, good outbreak communication must start with outbreak response planning. As part of complete pandemic preparedness, member States are encouraged to integrate and strengthen their communication capacity to provide a complete response to outbreaks, including the next pandemic.

39. UNICEF and WHO have worked extensively to develop and implement a set of social mobilization strategies to prepare communities to respond to outbreaks. Similarly, these agencies have helped countries publicize polio and measles eradication campaigns. UNAIDS and many of its co-sponsoring United Nations agencies have worked to increase public information and sensitization to change HIV/AIDS behaviour. The Stop TB Partnership and the WHO Stop TB Department have worked to mobilize communities and individuals to adhere to DOTS to control active tuberculosis disease. Similarly, the WHO Global Malaria Programme and the Roll Back Malaria Partnership communicate on the impact of and recommended strategies to control malaria, as well as to mobilize a number of different sectors to respond.

Research, drug and vaccine development

40. Responding to any disease occurrence relies heavily on the availability of diagnostics, drugs, microbicides and vaccines. However, the availability of these is often precarious, depending on the state of the science. Creating vaccines for some viruses, such as HIV, has proven to be exceedingly difficult. Others, such as for influenza, vary considerably by strains and geography. Given the expense in developing these commodities, public-private partnerships and various market incentives are often required to encourage the pharmaceutical industry to enter a given market niche. Where diseases predominately affect developing countries, the challenges of developing the various commodities at a low cost increases.

41. Immunization programmes have long experienced these dynamics. In response to immunization needs worldwide, global partnerships, such as the Global Alliance

for Vaccines and Immunization, the Vaccine Fund, and the Measles Partnership, have been created in order to attain shared goals. Such partnerships bring together major stakeholders in immunization from the public and private sectors, including the vaccine industry. Initiatives for the eradication of poliomyelitis, reducing measles mortality and the elimination of maternal and neonatal tetanus have shown that partnerships enable immunization services to be brought to even the most hard-to-reach communities. The Global Alliance for Vaccines and Immunization has also been a major supporter of the yellow fever vaccine initiative.

42. Immunization is a highly cost-effective and relatively inexpensive health intervention. The overall cost of immunization, however, including the procurement of new vaccines, new vaccine formulations and technologies, is expected to rise sharply in the future. The expansion of vaccination schedules to include new vaccines has greatly increased the amount of resources that need to be mobilized. Although some relief may be obtained over time as the larger amounts of vaccine to be procured lead to greater competition among manufacturers and a reduction in price, experience has shown that it takes several years before increased demand for new vaccines is matched by lower prices. Meanwhile, the rising cost of immunization delivery needs to be added to the cost of vaccines; logistics and labour are becoming more expensive, and the extension of services to populations that are currently not being reached will need additional resources.

43. Securing the financing for the introduction of new vaccines and increasing coverage with existing vaccines will test all countries and their partners. Innovative financing mechanisms, such as the International Finance Facility for Immunization and Advance Market Commitments are worth investigating in this regard.

44. Efforts are under way to develop new vaccines against major infectious diseases (including malaria, HIV/AIDS and tuberculosis). Meanwhile, many other new vaccines and technologies are already licensed or at an advanced stage of development (including human papillomavirus, rotavirus and pneumococcal vaccines), and other vaccines are readily available but underused. Activities to ensure the safety of immunization are also being implemented (such as the use of autodisposable syringes), and the subject is becoming a top priority for countries. During the period 2006-2015, countries may be faced with an unprecedented array of new vaccines and technologies for introduction. To ensure that countries can make rational, evidence-based decisions about the choice of new vaccines and technologies, current gaps in knowledge (including disease burden, the cost-effectiveness of various strategies and regulatory issues) will have to be filled.

45. Ways need to be found to maximize the cost-effectiveness of contacts with immunization services (such as spreading the cost of these contacts across relevant health initiatives) and to strengthen national capability to project financial needs and obtain the required resources. Evidence-based policy decisions will have to be taken on the "affordability" of vaccines in relation to the reduction of disease burden.

46. The development of tools and products deriving from international efforts helps bring into focus how domestic public health and health system action is not sufficient to control major epidemics and endemic diseases. Trade issues have become an important force in the accessibility of health products (including drugs and vaccines). The Doha Ministerial Declaration on the TRIPS Agreement and Public Health was an important development in this regard. Other benefits of globalization are beginning to accrue to developing countries, including

telemedicine, the use of electronic media for training and increased sensitization to traditional medicine.

47. WHO has organized an emergency stockpile of two million doses of antiviral drugs to respond to a human influenza pandemic, and is developing standard operating procedures for their deployment as part of outbreak investigations.

Emergencies and crises

48. Each year, one in five member States experiences a major emergency or a crisis that endangers the health of its people. Emergencies and crises strike communities, affecting the development and health of their populations, sometimes with little or no external assistance in relief and recovery operations. Emergencies have a variety of origins, natural or man-made, ranging from environmental hazards to civil unrest and including technological and health-related hazards. Their impact on health services and the health status of populations is usually the most obvious effect and may persist for years. International response, although very useful, is usually late and takes time to adjust to local conditions. Investment in building community capacity in emergency preparedness and response at country and community levels is the only sustainable answer to such situations.

49. Field experience indicates that to respond effectively to any emergency, preparedness is essential. Building national capacity to manage risks and reduce vulnerability requires updated policies and legislation; multisectoral and intrasectoral coordination; appropriate structures; information; plans and procedures; resources and partnerships are vital to mitigate hazards and manage their impact on the health and well-being of affected populations.

50. At the international level, the United Nations system and other international organizations work towards this end in close collaboration with partners such as national and international NGOs. One of the main components of the United Nations humanitarian reform process is better coordination of humanitarian partners through the "cluster" system at global and country levels. The Inter-Agency Standing Committee, the primary body for inter-agency coordination of humanitarian assistance, accordingly organized the work of its different members into technical "clusters" in mid-2005. WHO was asked to act as the lead organization in efforts to improve the coordination, effectiveness and efficiency of health action in crises in the areas of preparedness, response and recovery. At the global level, the cluster aims to improve preparedness and technical capacity of health systems to respond to humanitarian emergencies. At the country level, the aim is to strengthen the health coordination framework and response capacity. This approach was applied in the aftermath of recent emergencies such as the South Asia earthquake, the Indonesia earthquake and the Lebanon crisis. However, additional efforts are required in institutional capacity-building.

51. Health-sector involvement in emergency and humanitarian action should be comprehensive. Improved response is needed in a wide range of areas, including the management of mass casualties; water, sanitation and hygiene; nutrition; control of communicable diseases; maternal, newborn and child health; noncommunicable diseases; mental health; pharmaceutical supplies; health technology and logistics; health information services; and the restoration of health-care delivery services. Strong technical guidance and leadership and better coordination between the

various "clusters" of the international response system will be needed to avoid response gaps in future emergencies.

Human resources for health

52. The WHO *World Health Report 2006: Working together for health* recognized the centrality of the health workforce for the effective operation of country health systems. It also recognized that there is a chronic shortage of well-trained health workers worldwide, both in terms of insufficient numbers of clinically and otherwise skilled health workers and the necessary administrative and logistics staff at all systems levels.

53. There is increasing evidence that health worker shortages are interfering with efforts to achieve the internationally agreed upon health-related development goals, including those contained in the Millennium Declaration. This health workforce crisis is severely hampering the ability of additional financial resources, made available through new modalities such as debt alleviation or the Global Fund to Fight AIDS, Tuberculosis and Malaria, to attain their goals. In many countries, there is simply insufficient human capacity to absorb, deploy and use efficiently the financing offered by global health initiatives.

54. In poorer countries, while the population is increasingly ageing, rapidly urbanizing and still suffering from infectious diseases, the health services fail to respond to current and emerging needs. The chasm is widening between what is theoretically possible and what is actually being done. Success in bridging this gap will be determined in large measure by how well the workforce is developed in order to contribute towards more effective health systems.

55. The *World Health Report 2006* estimated a shortage of 2.3 million doctors, nurses and midwives to scale up the health workforce to the levels required to strengthen health systems and accelerate progress towards attaining the Millennium Development Goals. An absolute health workforce shortage is experienced in 57 countries. In 36 countries in the African region alone, the training and deployment of an additional 800,000 doctors, nurses and midwives is required, which implies scaling up the current workforce in the continent by some 139 per cent. The cost of training and deploying the needed workforce worldwide would require an increase in health spending of about $10 per capita in each country by 2025.

United Nations system activities

56. Responding effectively to outbreaks of deleterious infectious diseases and to the entire continuum of health conditions affecting developing countries and transitional economies requires the engagement of Governments, the private sector, civil society, regional forums, international agencies, the media and other partners. Examples of United Nations system activities in this field are as follows.

57. The substantive session of the Economic and Social Council in July 2006 addressed the issue of avian and human pandemic influenza preparedness. The Economic and Social Council pledged to maintain an active engagement in the issue. Similarly, over the past two years, many countries have joined in solidarity to pledge resources to support developing countries to enhance their public health capacity to plan and respond to avian and human pandemic influenza. Meetings in

Beijing, Washington, D.C. (the International Partnership on Avian and Pandemic Influenza), and Vienna have been convened to raise and track these pledges.

58. Regional United Nations institutions such as the Economic Commission for Africa (ECA) have been actively engaged in conducting the necessary analysis and providing leadership on addressing major health issues affecting development progress for Africa. ECA has been very concerned about the disproportionate impact that HIV/AIDS and the resurgence of old diseases such as tuberculosis and malaria have had on Africans' life expectancy and economic productivity. ECA, in collaboration with the African Union, WHO and UNAIDS has monitored the 2001 Abuja Declaration on HIV/AIDS, Tuberculosis and Other Related Infectious Diseases and country actions to establish national AIDS councils and national strategic plans for combating tuberculosis.

59. The Economic and Social Commission for Asia and the Pacific (ESCAP) has incorporated the theme of strengthening health systems as a core element of its programme of work. This focus is on normative and policy analysis for increased investments in health systems and health sector financing. The Commission endorsed a comprehensive regional framework for strategic action: promoting health and sustainable development with five priority areas: (a) strengthening health systems; (b) enhancing multisectoral action for health; (c) managing the health implications of globalization; (d) promoting sustainable environmental development to improve health; and (e) increasing the effectiveness of the response to HIV/AIDS.

60. To further regional cooperation for a more effective response to the HIV/AIDS epidemic, ESCAP is implementing a project in the Greater Mekong subregion to improve health and reduce HIV/AIDS vulnerability among long distance road transport workers through a multisectoral approach. The project engages diverse stakeholders, including transport workers, transport enterprises, ministries of transport and health, local government entities and civil society organizations. Additional ESCAP activities have focused on scaled up effective HIV/AIDS prevention interventions for youth and drug abuse-related pilot training programmes in four countries.

61. It is now widely recognized that diseases have significant impact on nutrition, food security and rural livelihoods, especially in developing regions where most of the population continues to live and work in rural areas. Within the United Nations system, FAO has a special responsibility for food security and rural development, with the overall objective to contribute to reducing poverty, eliminating hunger and fighting malnutrition. The ultimate goal is to contribute to disease prevention through the reduction of risk and vulnerability, and to mitigate the impact of diseases on individuals and society. A weak rural sector is detrimental to good health, nutrition, food security and resilience of livelihoods. Thus, any agricultural intervention seeking to tackle problems of infectious diseases must address the weaknesses of the agricultural and rural livelihoods sectors. Such weaknesses range from policy, technology, price and markets, safety nets, access to natural resources, access to inputs, infrastructure, rural investment and capacity of human resources.

62. The FAO response to infectious diseases and related public health concerns is organized around five substantive pillars and carried out in both normative and operational work:

(a) Strengthening the capacity of FAO member States to plan for agriculture and natural resources development to reduce or eliminate risks and vulnerability to food insecurity and increase resiliency against the impact of infectious diseases. FAO provides support to member States to cope with the threat to rural livelihoods of avian influenza and its prevention and control by developing social rapid impact assessment tools and conducting applied research;

(b) Promoting generation of and access to improved agricultural technologies necessary for the rural sector to compensate for unfavourable changes in demographic composition owing to disease-related morbidity and mortality, but also to other population processes such as ageing and migration. FAO supports the development and adoption of agro-technological innovations that are appropriate to local circumstances to increase food production beyond subsistence levels, and is increasing farmers' exposure to new ideas and access to information to develop skills and attitudes that permit their sustained use through direct farmer-to-farmer exchange, farmer field days, farmer field schools and participatory development groups;

(c) Reinforcing the capacity of local governance structures — government bodies, the private sector, civil society and NGOs — to design and implement local agriculture development programmes that are sensitive to the impact of infectious diseases. For example, FAO is working with local ministries and extension services in member countries to build their capacities to deal with the reduced agriculture labour force and to inform them on technical issues (such as the FAO/WHO training manual on nutritional care and support for people living with HIV/AIDS, *Living Well with HIV/AIDS*);

(d) Empowering vulnerable groups through support for effective community action planning ("helping communities to help themselves"), the protection of property rights and the building of entrepreneurial and other relevant skills. Through field projects, emergency rehabilitation and policy support, FAO is specifically addressing the concerns of vulnerable groups, especially poor women, youth, the elderly and people living with HIV/AIDS. Junior Farmer Field and Life Schools are one example where FAO is targeting orphans and other vulnerable children to mitigate food insecurity and to pass on agricultural knowledge. As of May 2006, FAO, in partnership with WFP, has set up 36 Junior Farmer Field and Life Schools for orphaned children in Kenya, Mozambique, Namibia, Swaziland, Zambia and Zimbabwe;

(e) Strengthening policy dialogue/advocacy and providing support to inter-agency and intersectoral collaboration for an effective multisectoral response through the leveraging of resources and expertise in agriculture, nutrition and food security. To ensure consideration of the latter in policies and practice, FAO collaborates with the International Fund for Agricultural Development, UNAIDS, WFP, WHO, UNICEF and the Regional Network on HIV/AIDS, Rural Livelihoods and Food Security. FAO also collaborates closely with other United Nations agencies, particularly WHO, UNICEF and WFP, and international stakeholders on avian influenza prevention and control and communication strategies, livelihoods impact assessment and human pandemic preparedness, especially for populations of humanitarian concern.

63. UNDP focuses on building national capacity and creating an enabling environment to address key health issues that represent development crises, such as

HIV/AIDS, and to assess their impact on human development and governance sectors. Similarly, UNDP has been engaged to help Governments plan for continuity in governance in the event of a human influenza pandemic.

64. In the case of AIDS, UNDP addresses the nexus between AIDS and human development through support for capacity-building to mainstream HIV/AIDS into poverty reduction strategies, promoting macroeconomic policies for sustained financing of AIDS responses, and helping countries to review national patent laws to improve access to needed medicines. UNDP helps to strengthen the capacity of Governments to govern and coordinate AIDS responses by aligning United Nations system and donor support to national programmes. UNDP also promotes human rights and gender equality to reduce HIV-related vulnerability, strengthen the involvement of people living with HIV in national responses and address stigma and discrimination.

65. In addition, UNDP supports improved implementation of programmes financed through multilateral funding initiatives, and develops capacities of national stakeholders to implement large funding grants. The UNDP approach includes engaging and developing the capacity of key leaders from Government, civil society and the private sector to lead multisectoral and multilevel responses to HIV/AIDS.

Conclusions and recommendations

66. **The recent lessons of infectious disease outbreaks and the resurgence of old diseases to new levels of prevalence require immediate action by developing countries and transitional economies and the support of international partners and donor Governments. This is coupled with the growing burden of chronic diseases worldwide, to which Governments and the international community will need to give increasing attention. To address these challenges and to enhance global public health capacity, increased investment in health systems, including the health workforce, is vitally needed to deliver good health outcomes. Such investment is critical to the achievement of internationally agreed development goals, including the Millennium Development Goals.**

67. **It is recommended that the General Assembly take note of the report and, in particular, to emphasize the importance of this subject for global security and development. The General Assembly may also wish to invite Member States to invest in building up the capacity of the required health systems.**